Distribution Integrity Management Program (DIMP) Proposed Federal Rule

One Perspective

From Information in Federal Register Dated 6/25/08
(search www.regulations.gov by Docket # PHMSA –RSPA-2004-19854)

Discussion Session for 7/17/08 Washington State Citizens Committee on Pipeline Safety

By Richard B. Kuprewicz

Gas Distribution Pipeline Systems – Hardware

- **In U.S. over 2 million miles of distribution system pipe**
  - "Low Pressure" low stress distribution natural gas systems
  - Approximately 1.2 million miles of mains
  - Over 63 million service lines
    - Since 2001, 5.1 million new service customers
  - Increasing failure trend over past 5 years
  - More people killed annually in distribution system failures than transmission pipelines
  - Primary failure mode is "leak" from (in order of "Incident" cause – as per 49CFR191.3)
    - 1) Outside force damage (mainly excavation damage), other outside force, and natural force
    - 2) Material failure
    - 3) "Weld" failure
    - Note on Corrosion
      - Principal cause of leaks on steel systems, but minor cause (4%) of "Incidents"
  - Majority of distribution systems now plastic
    - Many systems still of other materials (e.g., steel, caste iron, copper, different plastics)
    - Future risks related to the 3 P's
      - Plastic, pressure increase, and phantom damage prevention!
  - **In Washington State - gas distribution systems**
    - Approximately 21,000 miles (excluding service lines)
    - Approximately 1,200,000 total services

General Types of Gas Distribution Systems

- 1) Approximately 1300 “traditional” natural gas distribution systems
  - Tend to cover larger geographical areas
  - More complex (i.e., grids)
  - Breaks into large and small gas distribution system operators
    - Includes municipal operators
- 2) Additionally approximate 8000 Master Meter (“MM”) and Liquefied Petroleum Gas (“LPG”) systems
  - Much smaller mileage and geographical area
    - More limited exposure to “public”
    - In fairness - MM and LPG is not a lot of mileage in U.S.!
- 3) Small gas systems – Not PHMSA Jurisdictional
    - Not underground, resale, very limited services, public/nonpublic systems, etc.
    - Not captured in MM and LPG definition/interpretation in current federal regulation
    - See recent studies for WUTC on small gas systems – http://www.wutc.wa.gov/pipeline
    - **DIMP proposed rule does not address these small gas systems**
- Distribution systems largely a state responsibility (intrastate systems)
  - Lots of variation amongst states
  - No state requires a comprehensive systematic evaluation and management of risk IM approach on distribution systems

DIMP Proposed Regulatory Approach

- For gas distribution system networks PHMSA proposes to divide into “large” and “small” operators
  - Cutoff criteria for size of network operator not defined
    - Large operators must document 7 critical IM elements
    - MM and LPG systems need to only meet 5 defined critical IM elements
    - Should Small traditional network operators meet only the 5 critical IM elements?
    - Number of service connections may not be an appropriate risk evaluator
      - In PHMSA cost benefit analysis section, 12,000 service connections or less mentioned as small gas distribution systems
        - » 12,000 cutoff divides 1300 traditional systems into 200 large, rest small operators
      - E.g., A modern well documented/managed 100,000 service system may have less risk than a poorly managed “evolved over time patchwork” 10,000 service system.
    - All operators still responsible for developing their own IM plans
      - APGA and SIF for more specific guidance for small operators
      - PHMSA asked GPTC (Linked to AGA) to issue DIMP guidance

Documenting DIMP IM Elements

1) **Knowledge of system infrastructure**
2) **Identify threats**
3) *Evaluate and prioritize risk*
4) **Identify and implement measures to address risk**
5) **Measure performance, monitor results, and evaluate effectiveness**
6) **Periodic evaluation and improvement**
7) *Report results*

Written procedures incorporating above elements required. Elements No 3 & 7 are proposed as not required for master meter and LPG systems, and possibly small gas distribution system operators.

Other Major Issues in DIMP Reg

- Excess Flow Valves, or EFV's
  - 6.3 million EFVs installed to date
  - DIMP requiring EFVs only on service lines (other than MM and LPG) meeting certain requirements
    - Only applies to new and replacement service lines
      - 10 psig or greater
      - No prior experience of contaminants
      - No interference with operation or "maintenance." - may need clarification
      - For services where EFVs are commercially available
  - EFVs not required on MM or LPG systems
- Leak reporting/retention
  - Number of "hazardous leaks" eliminated or repaired by cause !!!
    - Going forward retained for life of pipeline
  - Historically varies across states
    - Concerning leaks Washington State (RCW-480-93) more "definitive"
  - "Hazardous leak" not defined in federal rule proposal
  - Plastic pipe failure reporting (timing)?
- Who gathers the databases if not PHMSA?
  - Is it Independent & Auditable?
  - Public Access to Some of the Information??

PHMSA Asking for Public Comments (In order within notice)

1. **On GPTC guidance for small operators**
2. **On master meters and LPG systems**
   a) Are proposed IM Limitations appropriate?
   b) Further limits on IM requirements?
   c) Exempt from IM requirements?
3. **Should IM requirements be limited for small distribution systems and whether five IM proposed element criteria (currently used for MM and LPG systems) are appropriate?**
4. **Concerning plastic pipe**
   1. Is Plastic Pipe Database Committee (PPDC) administered by AGA adequate or should PHMSA seek an independent third party to perform this function?
   2. Reporting frequency other than within proposed 90 days of plastic pipe / fitting failure to PHMSA?
   3. Should permanent marking be required in regulation?
5. **Are proposed reporting requirement burdens associated with data collection justified? Annual required for:**
   a) Number of hazardous leaks either eliminated or repaired (by cause)
   b) Number of excavation damages
   c) Number of excavation “tickets”
   d) Number of EFVs installed

PHMSA Asking for Public Comments (cont)

6. **On deviating from prescriptive intervals defined in existing federal regulation**
   a) Advantages/disadvantages of distribution operators and states setting intervals?
   b) Should there be some limit on such deviations?
   c) How should a state establish such limits?
   d) What additional performance data/analysis should be required?
   e) What cost to States should be associated with this?
   f) What cost saving to operators could result?
   g) What basis can a State judge the operator's engineering basis to be adequate?
7. **Prevention through People (PTP)**
   a) Comment on PTP.
   b) Other requirements that should be included in this and future IM program rulemaking?
   c) How operators are addressing human factors, including fatigue, in managing integrity?
8. **On draft gas guidance document for small network, master meter, and LPG systems.**
9. **On cost benefit assumptions, especially for smallest gas systems.**
10. **On burdens associated with federal (PHMSA) proposed information collection.**
    a) Necessary for PHMSA to perform its functions?
    b) Its practicality, utility, accuracy, clarity?
    c) Undo burden on those responding to request?

Where Does Committee Go From Here?

- Response to PHMSA specific requests for public comments?
  - Committee's list and priority order?
- Risk based approaches, database completeness, and public right to know!
  - Leak reporting/retention important
    - By material very important in risk approach
- Phase-in Timing for DIMP
    - Big Resource demand on PHMSA and states!!
    - Over 9,000 operators
    - Who should get implementation first?
    - Largest system may not be the most appropriate concerning risk.
- Other issues?
  - DIMP does not cover small gas systems
- Public Docket Comment Deadline 9/23/08
  - Before next Citizens Committee meeting